


PTO/SB/08A (08-00)  
Approved for use through 10/31/2001. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO					
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	10/694,621
				Filing Date	October 27, 2003
				First Named Inventor	Paul Van Riel
				Group Art Unit	2857
				Examiner Name	Not Yet Assigned
				Attorney Docket Number	0702-032079
Sheet	1	of	3		

[illegible][illegible]

Examiner Signature		Date Considered	04/02/05
--------------------	---	-----------------	----------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>4</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>5</sup>Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, .P.O.Box 1450, Alexandria, VA 22313-1450.**

Please type a plus sign (+) inside this box → ☐

Approved for use through 10/31/2001. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO		Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/694,621
		Filing Date	October 27, 2003
		First Named Inventor	Paul Van Riel
		Group Art Unit	2857
		Examiner Name	Not Yet Assigned
		Attorney Docket Number	0702-032079
Sheet	2	of	3

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, cite and/or country where published.	T <sup>2</sup>
		JOHN P. CASTAGNA and MILO M. BACKUS; "Offset-Dependent Reflectivity - Theory and Practice of AVO Analysis"; Investigations in Geophysics No. 8; pgs. 1-36; Society of Exploration Geophysicists, AVO Analysis-Tutorial and Review.	
		PATRICK CONNOLLY; "Elastic impedance"; THE LEADING EDGE; April, 1999; pgs. 438, 440, 442, 444, 446, 448, 450, 452.	
		IRSHAD R. MUFTI and RICARDO A.R. FERNANDES; "A wave-equation splitting algorithm for seismic modeling with applications to anisotropic media", 1998 SEG Expanded Abstracts (4 pgs.).	
		ARILD BULAND and HENNING OMRE; "D-39 Bayesian Seismic Inversion and Estimation in a Spatial Setting", EAGE 65 <sup>th</sup> Conference & Exhibition-Stavanger, Norway, 2-5 June 2003 (pgs. 1-4).	
		ARILD BULAND and HENNING OMRE; "Bayesian linearized AVO Inversion"; GEOPHYSICS, Vol. 68, No. 1 (January-February 2003); Pgs. 185-198, 16 Figs., 3 Tables.	
		JAN L. FATTI, ET AL; "Detection of gas in sandstone reservoirs using AVO analysis: A 3-D seismic case history using the Geostack technique"; GEOPHYSICS, Vol. 59, No. 9 (September 1994); pgs. 1362-1376, 16 Figs., 1 Table.	
		BILL GOODWAY, ET AL; "Improved AVO fluid detection and lithology discrimination using Lamé petrophysical parameters; $\lambda\rho$ , $\mu\rho$ , & $\lambda/\mu$ fluid stack", from P and S inversions"; Canadian Society of Exploration Geophysicists 1998 Annual Meeting Expanded Abstracts, AVO 2.7, pgs. 183-186.	
		KLAUS BOLDING RASMUSSEN, ET AL.; "Rock Properties Prediction Through AVO Seismic Inversion"; NPF Geophysical Biennial Geophysical Seminar Expanded Abstracts; pgs. 107-110.	
		H. RUTLEDAL, ET AL.; "Time-Lapse Elastic Inversion at the Oseberg Field"; EAGE 64 <sup>th</sup> Conference & Exhibition-Florence, Italy; May 27-30, 2002; pgs. 1-4.	
		G.C. SMITH and P.M. GIDLOW; "Weighted Stacking for Rock Property Estimation and Detection of Gas"; Geophysical Prospecting 35; 1987; pgs. 993-1014.	

Examiner Signature		Date Considered	02/22/05
--------------------	--	-----------------	----------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.










Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

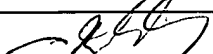
Please type a plus sign (+) inside this box → ☐

Approved for use through 10/31/2001. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO		Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/694,621
		Filing Date	October 27, 2003
		First Named Inventor	Paul Van Riel
		Group Art Unit	2857
		Examiner Name	Not Yet Assigned
		Attorney Docket Number	0702-032079
Sheet	3	of	3

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, cite and/or country where published.	T <sup>2</sup>
		T. TONELLOT, ET AL.; "3D quantitative AVA: Joint versus sequential stratigraphic inversion of angle-limited stacks"; SEG Int'l Exposition and 72 <sup>nd</sup> Annual Meeting, Salt Lake City, Utah; October 6-11, 2002; (4 pgs.).	
		DAVID N. WHITCOMBE, ET AL.; "Extended elastic impedance for fluid and lithology prediction"; SEG 2000 Expanded Abstracts; (4 pgs.).	
		A.T. WALDEN and R.E. WHITE; "On Errors of Fit and Accuracy in Matching Synthetic Seismograms and Seismic Traces", Geophysical Prospecting 32, 1984; pgs. 871-891.	
		ROY WHITE and ROB SIMM; "Tutorial: Good practice in well ties", © 2003 EAGE; First Break vol. 21, October 2003; pgs. 75-83.	
		CHARLES BERTRAND, ET AL.; "Seismic facies analysis applied to P and S impedances from pre-stack inversion"; SEG Int'l Exposition and 72 <sup>nd</sup> Annual Meeting Expanded Abstracts, Salt Lake City, Utah, October 6-11, 2002; (4 pgs.).	
		ALISTAIR R. BROWN; "Tuning Phenomena in Reservoirs" Interpretation of Three-Dimensional Seismic Data; AAPG Memoir 42, American Association of Petroleum Geologists, Fourth Edition, Chapter Six; pgs. 179-190.	
		STEVE LANCASTER and DAVID WHITCOMBE; "Fast-track 'coloured' inversion"; SEG 2000 Expanded Abstracts; (4 pgs.).	
		ANDREAS RÜGER; "Reflection Coefficients and Azimuthal AVO Analysis in Anisotropic Media"; SEG Number 10; Geophysical monograph series; Published 2002; United States of America; pgs. cover page, i-xi, 1-189	
		LEON THOMSEN; "Understanding Seismic Anisotropy in Exploration and Exploitation; 2002 Distinguished Instructor Short Course, Distinguished Instructor Series, No. 5; Sponsored by the Society of Exploration Geophysicists European Association of Geoscientists & Engineers; (165 pgs.).	

Examiner Signature		Date Considered	02/27/05
--------------------	---	-----------------	----------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.